

Application Serial No. 10/749,180
Reply to Office Action of April 17, 2008

PATENT
Docket: CU-6547

REMARKS

In the Office Action, dated April 17, 2008, the Examiner states that Claims 1-6 are pending and rejected. By the present Amendment, Applicant amends the specification and the claims.

1. Rejection of Claims 1 and 5 under 35 U.S.C. 103(a)

Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as obvious over Reimers et al. (US 6,416,904) in view of Kaido et al. (US 6,284,405) for the reasons of record. Applicant respectfully disagrees with and traverses this rejection.

At the outset, Claim 5 has been cancelled and Claim 1 has been amended. These actions were taken solely in the interest of advancing prosecution and without prejudice or disclaimer of the subject matter thereof. As such, the rejection of Claim 5 is now moot.

With respect to amended Claim 1, Reimers et al. and Kaido et al. are completely silent regarding the feature of wherein an edge of the starting side of the second electrode active material layer is present between an edge and peak of the starting side of the first electrode active material layer; and wherein a peak of the starting side of the second electrode active material layer is set in a position corresponding to an inclined portion in the range from a peak of the starting side of the first electrode active material layer to the intermediate portion of the first electrode active material layer.

In the present invention, (i) the starting side of each of the coated sections of the first and second electrode active material layers have a larger protuberance than the finishing side thereof; (ii) the first and second electrode active material layer has an intermediate portion having a constant thickness; (iii) the edge of the starting side of the second electrode active material layer is present between the edge and peak of the starting side of the first electrode active material layer; and (iv) the peak of the starting side of the second electrode active material layer is set in a position corresponding to the inclined portion in the range from the peak to intermediate portion of the starting side of the first electrode active material, so one unit of increased thickness (one thickened portion) is formed in the range from the edge of the starting side of the front surface to the end of the starting side of the rear surface while the thickness of the protuberance is deconcentrated (see page 13, line 17 –

Application Serial No. 10/749,180
Reply to Office Action of April 17, 2008

PATENT
Docket: CU-6547

page 14, line 2 of the present specification). In currently amended Claim 1, the protuberances on the front and rear surfaces are not allowed to conform to each other thus resulting in the formation of one large hill. To put differently, the peaks of the protuberances on the front and rear surfaces do not form two separate hills. Thus, in the electrode plate of currently amended Claim 1, tension is evenly applied on both surfaces of the collector during pressing so that the electrode plate can be more effective in preventing the electrode active material layers from chipping, dropping and other damages, and in preventing the collector from breaking and other damage. Since the figures of Reimers et al. show the peaks of protuberances of the first and second sides of the web form two separate / independent protuberances, chipping or dropping the electrode active material layer is likely to occur.

Also, in the present invention, by making the shape and position of the first and second electrode active material layers as described in currently amended Claim 1, each intermittently coated section is allowed to have substantially only one unit of increased thickness (one thickened portion), so that the first and second electrode active material layers are in an unbreakable shape and the number of breakable portions is decreased to 1. This is yet another feature missing from the combination of the Reimers et al. and Kaido et al. references.

As such, Applicant respectfully asserts that currently amended Claim 1 is not obvious over Reimers et al. in view of Kaido et al.

2. Rejection of Claim 3 under 35 U.S.C. 103(a)

Claim 3 is rejected under 35 U.S.C. 103(a) as obvious over Reimers et al. in view of Kaido et al. and Fukumura et al. (US 6,027,835) for the reasons of record. Applicant respectfully disagrees with and traverses this rejection.

As explained in the previous section, independent Claim 1 is patentable over the cited prior art. Since independent Claim 1 is patentable over the prior art, all claims depending therefrom should be patentable by virtue of their dependency on a patentable independent claim, as well as for the features that they recite.

As such, Applicant respectfully requests withdrawal of the rejection of Claim 3 under 35 U.S.C. 103(a).

3. Rejection of Claims 2 and 6 under 35 U.S.C. 103(a)

Application Serial No. 10/749,180
Reply to Office Action of April 17, 2008

PATENT
Docket: CU-6547

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as obvious over Reimers et al. in view of Kaido et al. and Meyering et al. (US 2001/0017280) for the reasons of record. Applicant respectfully disagrees with and traverses this rejection.

At the outset, Claim 2 has been amended solely for the purpose of advancing prosecution and without prejudice or disclaimer of the subject matter thereof.

Applicant respectfully asserts that amended Claim 2 is not obvious over the cited prior art. As stated in the Office Action, Reimer et al. and Kaido et al. fail to teach forming intermittently coated sections on both surfaces consecutively in the same conveying direction. In Meyering et al., resin solution is applied simultaneously on both sides of the support material and both sides are simultaneously subjected to contact with quenching solution in a quenching bath to become solidified. As such, Meyering et al. fails to disclose that after an electrode active material layer coating composition is applied intermittently onto one surface and dried to form intermittently coated sections, the other surface is subjected to the same procedures to form intermittently coated sections on the other surface, and both surfaces are consecutively prepared in the same conveying direction. The method of Meyering et al. for applying a resin solution simultaneously on both sides of a support material is suitable for the case of performing continuous coating to form a symmetrical layer on both sides of a support material. However, this method cannot be employed in the case of the instant invention, whereby both surfaces of a support are intermittently coated and then the intermittently coated sections are shifted on both surfaces by an optimized value. If one utilizes the method of simultaneously coating both surfaces without drying each surface, a clearance between the coating head and the support would not be stable thus coating accuracy cannot be achieved.

The present invention employs a method in which, after an electrode active material layer coating composition is applied intermittently onto one surface and dried to form intermittently coated sections, the other surface is subjected to the same procedures to form intermittently coated sections thereon, and both surfaces are consecutively prepared in the same conveying direction. Due to the foregoing, the starting sides of the intermittently coated sections are allowed to face each other on both surfaces of a support, and the shape and distance of the intermittently coated sections are optimized so that the protuberances on the front and rear

Application Serial No. 10/749,180
Reply to Office Action of April 17, 2008

PATENT
Docket: CU-6547

surfaces conform to each other and result in forming a large hill, thereby preparing an electrode plate that is protected from breaking and other damages. Applicant respectfully asserts that the features of this method are not taught or suggested by the cited prior art in which continuous coating is simultaneously performed on both sides of a support material to form a symmetrical layer thereon.

Furthermore, Meyering et al. fails to disclose the feature of drying by means of a dryer using one or more kinds selected from the group consisting of heat, heated air, infrared ray, microwave, high frequency wave and a combination thereof.

Since independent Claim 2 is patentable over the prior art, all claims depending therefrom should be patentable by virtue of their dependency on a patentable independent claim, as well as for the features that they recite.

As such, Applicant respectfully requests withdrawal of the rejection of Claims 2 and 6 under 35 U.S.C. 103(a).

4. Rejection of Claim 4 under 35 U.S.C. 103(a)

Claim 4 is rejected under 35 U.S.C. 103(a) as obvious over Reimers et al. in view of Kaido et al., Meyering et al., and Fukumura et al. for the reasons of record. Applicant respectfully disagrees with and traverses this rejection.

As explained in the previous section, independent Claim 2 is patentable over the cited prior art. Since independent Claim 2 is patentable over the prior art, all claims depending therefrom should be patentable by virtue of their dependency on a patentable independent claim, as well as for the features that they recite.

As such, Applicant respectfully requests withdrawal of the rejection of Claim 4 under 35 U.S.C. 103(a).

Application Serial No. 10/749,180
Reply to Office Action of April 17, 2008

PATENT
Docket: CU-6547

In light of the foregoing response, all the outstanding objections and rejections are considered overcome. Applicant respectfully submits that this application should now be in condition for allowance and respectfully requests favorable consideration.

Respectfully submitted,

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Date



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